

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Takuya Hara et al.

Confirmation No.: 9748

Application No.: 10/784,804

Art Unit: 3653

Filed: February 24, 2004

Examiner: Joseph C. Rodriguez

For: APPARATUS AND METHOD FOR
SCREENING OF WORKS IN RESPONSE
TO INSPECTION RESULTS

Docket No.: X2007.0151

AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

Commissioner for Patents
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated March 1, 2006, please amend the above-identified U.S. patent application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 9 of this paper.

FEE CALCULATION

Any additional fee required has been calculated as follows:

	Claims Remaining After Amendment	Highest Number Previously Paid	Number Extra Claims Present	Rate	Additional Fee
Total	22	- 20 =	2	X 50.00	\$ 100.00
Independent	2	- 3** =		X 200.00	
First presentation of Multiple Dependent Claim(s) (if applicable)					
TOTAL					\$ 100.00

*not less than 20 ** not less than 3

In the event a fee is required or if any additional fee during the prosecution of this application is not paid, the Patent Office is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-2215.

CONTINGENT EXTENSION REQUEST

If this communication is filed after the shortened statutory time period had elapsed and no separate Petition is enclosed, the Commissioner of Patents and Trademarks is petitioned, under 37 C.F.R. § 1.136(a), to extend the time for filing a response to the outstanding Office Action by the number of months which will avoid abandonment under 37 C.F.R. § 1.135. The fee under 37 C.F.R. § 1.17 should be charged to our Deposit Account No. 50-2215.

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A work screening apparatus comprising:
a slope way for sequentially transporting a plurality of works for which inspection has been completed by an inspection apparatus;

a first transport unit equipped with a plurality of work holding spaces, so that the plurality of works sequentially transported via the slope way are independently held in the plurality of work holding spaces, wherein a leap inhibiting wall is arranged at a prescribed position between the slope way and the work holding space so as to inhibit each of the works from leaping outside therefrom; and

a discharge unit for automatically discharging the plurality of works transported thereto from the first transport unit at a prescribed discharge position in response to inspection results thereof produced by the inspection apparatus.

2. (Currently Amended) The work screening apparatus according to claim 1,

wherein the plurality of works are sequentially put into the plurality of work holding spaces independently in accordance with rotation of the first transport unit, ~~which includes a secondary~~ said first transport unit comprising a second transport unit having a planar portion for receiving the plurality of works transported thereto and for further transporting the plurality of works towards the prescribed discharge position, and said first transport unit ~~[[is]]~~ being installed in a hollow of a housing so that each of the work holding spaces is defined between a circumferential wall of the hollow and a bottom of the hollow ~~[[,]]~~; and

wherein an upper surface of the ~~secondary~~ second transport unit is set substantially at a same height as the bottom of the hollow, and an opening ~~[[is]]~~ being formed to partially cut out the circumferential wall of the hollow to communicate with the ~~secondary~~ second transport unit, and the opening of the hollow ~~[is]~~ being arranged just above the upper surface of the ~~secondary~~ second transport unit.

3. (Currently Amended) The work screening apparatus according to claim 2, wherein a gap is arranged between the first transport unit and the ~~secondary~~ second transport unit in relation to the opening through which the work is transported from the first transport unit to the ~~secondary~~ second transport unit, thus preventing the work from being held between the first transport unit and the housing as the first transport unit rotates.

4. (Currently Amended) The work screening apparatus according to claim 2, wherein an escape channel is arranged in the first transport unit so as to allow the work to escape towards a downstream side as the first transport unit rotates, so that the work that fails to be transported to the ~~secondary~~ second transport unit is discharged outside of the first transport unit.

5. (Currently Amended) The work screening apparatus according to claim 2, wherein the first transport unit and the ~~secondary~~ second transport unit are set at substantially a same relative moving speed at the opening realizing communication between the first transport unit and the ~~secondary~~ second transport unit, so that the discharge unit discharges only the work that is transported thereto by means of the ~~secondary~~ second transport unit.

6. (Currently Amended) The work screening apparatus according to claim 1, wherein the first transport unit comprises a transport table having a plurality of notches, which are arranged in a circumferential direction thereof at prescribed pitches therebetween, so that the plurality of work holding spaces are defined by the plurality of notches of the transport table, which is installed in the hollow of the housing.

7. (Currently Amended) The work screening apparatus according to claim 1, wherein the ~~secondary~~ second transport unit comprises a screening table, a part of which is located in proximity to the first transport unit via the opening of the housing,

so that the plurality of works sequentially transported by the first transport unit are put onto an outer peripheral portion of the screening table, by which the plurality of works are rotatably moved towards the prescribed discharge position.

8. (Currently Amended) The work screening apparatus according to claim 1, wherein the discharge unit comprises at least one air exhaust device arranged in relation to the ~~secondary~~ second transport unit, so that the work transported by the ~~secondary~~ second transport unit is discharged at the prescribed discharge position by activating the air exhaust device.

9. (Currently Amended) A work screening method comprising ~~the steps~~ of:

sequentially transporting a plurality of works, which are completed in inspection by an inspection apparatus, via a slope way;

putting the plurality of works into a plurality of work holding spaces, which are arranged at prescribed pitches therebetween and provided with a leap inhibiting wall for inhibiting the work from leaping outside therefrom, and each of which is moved to communicate with the slope way to receive each of the works from the slope way; and

automatically discharging each of the works, which are conveyed by means of the plurality of work holding spaces, at a prescribed discharge position in response to its inspection result produced by the inspection apparatus.

10. (Previously presented) The work screening method according to claim 9, wherein a time period in which the plurality of work holding spaces move by one pitch is set shorter than a time interval in which each of the works is transported via the slope way.

11. (Currently Amended) The work screening method according to claim 9 further comprising ~~the step of~~:

further transporting each of the plurality of works, which are conveyed by means of the plurality of work holding spaces, towards the prescribed discharge position.

12. (Previously Presented) The work screening method according to claim 9, wherein each of the works is discharged at the prescribed discharge position by means of an air exhaust device.

13. (Currently Amended) The work screening apparatus according to claim 3, wherein an escape channel is arranged in the first transport unit so as to allow the work to escape towards a downstream side as the first transport unit rotates, so that the work that fails to be transported to the ~~secondary~~ second transport unit is discharged outside of the first transport unit.

14. (Currently Amended) The work screening apparatus according to claim 3, wherein the first transport unit and the ~~secondary~~ second transport unit are set at substantially a same relative moving speed at the opening realizing communication between the first transport unit and the ~~secondary~~ second transport unit, so that the discharge unit discharges only the work that is transported thereto by means of the ~~secondary~~ second transport unit.

15. (Currently Amended) The work screening apparatus according to claim 2, wherein the first transport unit comprises a transport table having a plurality of notches, which are arranged in a circumferential direction thereof at prescribed pitches therebetween, so that the plurality of work holding spaces are defined by the plurality of notches of the transport table, which is installed in the hollow of the housing.

16. (Currently Amended) The work screening apparatus according to claim 3, wherein the first transport unit comprises a transport table having a plurality of notches, which are arranged in a circumferential direction thereof at prescribed

pitches therebetween, so that the plurality of work holding spaces are defined by the plurality of notches of the transport table, which is installed in the hollow of the housing.

17. (Currently Amended) The work screening apparatus according to claim 2, wherein the ~~secondary~~ second transport unit comprises a screening table, a part of which is located in proximity to the first transport unit via the opening of the housing, so that the plurality of works sequentially transported by the first transport unit are put onto an outer peripheral portion of the screening table, by which the plurality of works are rotatably moved towards the prescribed discharge position.

18. (Currently Amended) The work screening apparatus according to claim 3, wherein the ~~secondary~~ second transport unit comprises a screening table, a part of which is located in proximity to the first transport unit via the opening of the housing, so that the plurality of works sequentially transported by the first transport unit are put onto an outer peripheral portion of the screening table, by which the plurality of works are rotatably moved towards the prescribed discharge position.

19. (Currently Amended) The work screening apparatus according to claim 2, wherein the discharge unit comprises at least one air exhaust device arranged in relation to the ~~secondary~~ second transport unit, so that the work transported by the ~~secondary~~ second transport unit is discharged at the prescribed discharge position by activating the air exhaust device.

20. (Currently Amended) The work screening apparatus according to claim 3, wherein the discharge unit comprises at least one air exhaust device arranged in relation to the ~~secondary~~ second transport unit, so that the work transported by the ~~secondary~~ second transport unit is discharged at the prescribed discharge position by activating the air exhaust device.

21. (New) The work screening apparatus according to claim 1, wherein the plurality of works sequentially and independently slide one by one onto the slope way, so that when the slope way is communicated with one of the work holding spaces, one of the plurality of works falls down into the work holding space.

22. (New) The work screening method according to claim 9, wherein the plurality of works sequentially and independently slide one by one onto the slope way, so that when the slope way is communicated with one of the work holding spaces, one of the plurality of works falls down into the work holding space.

REMARKS

Claims 1 to 22 are pending in this application. Claims 2-8 and 13-19 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-8 have been rejected under § 102(b) over U.S. Patent No. 6,294,747 to Liu et al. Claims 9-20 have been rejected under § 103(a) over Liu in view of Applicant's Admitted Prior Art. By this Amendment, applicants have amended the claims and added new claims 21 and 22 depending respectively from independent claims 1 and 9. The claim amendments are of formal nature and do not narrow the scope of any of the claims or any claim element contained therein. Applicants respectfully traverse the above rejections and request reconsideration of the subject application in view of the following remarks.

On page 2 of the Office Action, claims 2-8 and 13-19 have been rejected under § 112, second paragraph. As is shown in the above claim amendments, the claims have been amended to refer to "the first transport unit" and "the second transport unit" as suggested in the Office Action. Accordingly, the subject rejection has been overcome.

On pages 2 - 4 of the Office Action, claims 1-8 have been rejected under §102 over Liu. This rejection is respectfully traversed.

Independent claim 1 requires "a slope way for **sequentially** transporting a plurality of works." (emphasis added) Liu does not disclose the above claimed feature.

In contrast to the present invention as recited in claim 1, the chute 29 in Liu transports the chips collectively and not sequentially. In column 4, lines 41-43, Liu teaches that "an inventory 19 of chips is passed from a hopper 27 along a vibrating chute 29 and gently deposited in the six to five o'clock position on the upper surface 7 of the loader wheel 5." In Figs. 4 and 20, Liu shows the inventory 19 of chips as a

congregation of chips. Therefore, the chute 29 in Liu transports the chips collectively, rather than sequentially as required in independent claim 1. The reason that Liu's system transports its chips collectively is that the transport system in Liu is positioned before its inspection apparatus and there is no need to sequentially transport its chips. Once inspected, Liu's system treats each chip individually, but the elements of the system identified as reading on the present invention transports the chips collectively and not sequentially. Accordingly, the system of Liu does not read on the present invention as recited in claim 1 as it does not sequentially transport its work pieces.

Furthermore, Liu does not disclose that its chute 29 is sloped as required in independent claim 1. The chute 29 in Liu vibrates to deposit chips on the upper surface 7 of the loader wheel 5.

In view of the above, Liu does not disclose each and every feature in independent claim 1. Independent claim 1 therefore patentably distinguishes over Liu. Accordingly, the subject rejection of independent claim 1 has been overcome. The rejection with respect to dependent claims 2 - 8 is respectfully requested to be withdrawn.

On page 5 of the Office Action, claims 9-20 have been rejected under § 103 over Liu in view of Applicant's Admitted Prior Art. This rejection is respectfully traversed.

Independent claim 9 requires "sequentially transporting a plurality of works." As is discussed above, Liu does not disclose this claim feature. Therefore, independent claim 9 patentably distinguishes over Liu for at least the same reason.

Moreover, independent claim 9 requires that "each of [the plurality of work holding spaces] is moved to communicate with the slope way to receive each of the works from the slope way." Liu does not disclose the above claim features. In contrast, Liu merely teaches depositing an inventory of chips on the upper surface 7 of the loader wheel 5. The grooves 17 formed in the upper surface 7 are arranged to pass

through the inventory of chips 19, rather than communicating with the chute 29, to receive at least one chip from the inventory. Therefore, Liu does not disclose the above feature in independent claim 9 and thus claim 9 patentably distinguishes over Liu for the above additional reason.

In view of the above, the subject rejection with respect to independent claim 9 has been overcome. The rejection of dependent claims 10 -20 is respectfully requested to be withdrawn.

New claims 21 and 22 depend respectively from claims 1 and 9 and recite additional features that distinguish over the cited prior art. Support for the new claims can be found in Fig. 6 and corresponding descriptions in the specification.

Applicants have shown that claims 1 to 20 are patentable over the cited art and hereby respectfully request that the rejections of the pending claims be withdrawn. Each of the pending claims 1 to 22 in this application is believed to be in immediate condition for allowance and such action is earnestly solicited.

Respectfully submitted,

Dated: June 1, 2006

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